

EL NINO CITIZEN PREPAREDNESS INFORMATION

EXECUTIVE LEADERSHIP

BY: ROBERT C FOX II
DIRECTOR OF EMERGENCY SERVICES
CORTE MADERA FIRE DEPARTMENT
CORTE MADERA, CALIFORNIA

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ABSTRACT

Our fire department has been inundated with requests and questions regarding the 1997/98 predicted El Nino phenomenon. Because of losses from past winter storms and El Nino's, the public needs information to prepare for the possible consequences to reduce their losses as well as reduce the possibilities of overloading resources.

The purpose of this research project was to develop information which could be disseminated to the public to prepare for the possible devastating effects of El Nino. This study used an action methodology and the questions needing to be answered to assist in this process were:

1. What questions does the public have regarding El Nino preparations?
2. What information does Town staff believe the public needs to better prepare themselves for the possible effects of El Nino?
3. What is the best way to disseminate information to the public on preparation prior to, during, and after an El Nino disaster?

The project started by research conducted through the National Fire Academy Learning Resource Center. It expanded to include requests to the Federal Emergency Management Agency, State Office of Emergency Services and tying into the Internet with El Nino as the hit. It continued through a

project management team made up of members of the general public through the Town of Corte Madera's Disaster Council. Requests were also made to the department staff, requesting information they thought appropriate to disseminate to reduce their calls for service as well as to better prepare the general public.

After research was completed and a draft flyer was developed, the author requested contributions from local resources, including the Chamber of Commerce. The flyer was disseminated to all residents and businesses within the Town of Corte Madera, along with a cover letter explaining what residents and businesses could do prior to, during, and after a major winter storm or the effects of El Nino.

The result of the work has reduced the amount of calls coming into city business offices and has greatly improved the preparedness of the residents and businesses, thereby relieving the mundane calls on town services.

It is recommended that each organization that deals with disasters develop an informational flyer that is most appropriate for their customers to better prepare their communities to deal with natural and manmade disasters.

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INTRODUCTION

Our fire department has been inundated with requests and questions regarding the 1997/98 predicted El Nino phenomenon. Because of losses from past winter storms and El Nino's, the public needs information to prepare for the possible consequences to reduce their losses as well as to reduce the possibilities of overloading our resources.

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1. What questions does the public have regarding El Nino preparations?
2. What information does Town staff believe the public needs to better prepare themselves for the possible effects of El Nino?
3. What is the best way to disseminate information to the public on preparation prior to, during, and after an El Nino disaster?

BACKGROUND AND SIGNIFICANCE

The San Francisco Bay Area, in 1982, was confronted with a major disaster. The disaster, many people believe, was associated with the effects of the El Nino phenomenon. Within the Town of Corte Madera, half of the area was under water. People were affected with up to three feet of water within the homes, businesses were shut down, U. S. Highway 101 and the Golden Gate Bridge were closed for three days. People were left stranded throughout the San Francisco Bay Area and specifically within Marin County. Millions of dollars of property loss and loss of business were associated with this.

The San Francisco Bay Area, which the Town of Corte Madera is within, is typically affected by severe winter storms. The El Nino adds to this. In 1992, 1993 and 1996 again we were hit with major winter storms. These were not affected by El Nino but had the same implications; heavy rains, high tides, heavy runoffs from the coastal hillsides, land slides, property damage caused by hurricane force winds and torrential rain.

In the summer of this year, 1997, the news media began to pick up on the ever increasing El Nino forming off of South America. This is the same El Nino affect that impacted the Town of Corte Madera in 1982.

Myself, as the Director of Emergency Services for the Town of Corte Madera, am responsible for the preparations for major disasters within the area. The general public started inundating Town Hall phone lines, as well as

fire and police phone lines, and have continued since the media picked up on this story. The El Nino was televised nightly on bay area and national news stations, as well as regional and local newspapers. Questions focused around what the Town was prepared to do for the possibility of El Nino and what homeowners could do.

In the early fall, Town staff meetings held weekly began to focus on El Nino preparations and communications. The Town's Disaster Council started to focus their meetings on what should be done for the possibility of another severe winter storm season, with the added affect of El Nino, and the discussions throughout the County of Marin, at local Fire Prevention Officers, Fire Chiefs, and Training Officers Meetings started to focus on this need for information and preparedness.

The Corte Madera Fire Department is staffed by six on-duty personnel a day, working out of two stations. The middle of town is divided by U. S. Highway 101 and the majority of personnel live outside the County of Marin. Typically, in winter storms, off-duty personnel are often unavailable to respond because of street and road closures in Sonoma County, where the majority of the department lives. The volunteer force is limited and most of the people work during the daytime hours leading to a work force in any major emergency or disaster that rarely exceeds the on-duty personnel strengths. The County of Marin has a very strong mutual aid system; however, with major regional emergencies, each department is on their own.

In 1992, the Corte Madera Fire Department responded to 92 calls for service in two days. Many of these calls could have been alleviated had the homeowners within the town prepared for the storm season which was ahead. The Town of Corte Madera began working on preparations several years ago with the publication of a town-wide disaster handbook. This handbook was disseminated to every resident and business within the Town of Corte Madera with information on what to do with emergencies that we may face, including earthquake, winter storms, floods, and major wildland fire conflagrations.

The town continued with this effort with Neighborhood Emergency Response Team (NERT) training to assist our residents, as well as take care of neighborhoods they lived in.

It is evident, however, that many people don't read these books from the phone calls we have received, and don't keep this information readily available. The Pacific Bell phone book has a whole section in the front of the phone book regarding emergency tips. However, many people are unaware of these tips as well.

Through the final Executive Fire Officer Program, Leadership, it was evident that leaders must take an active role and work with the community to solve problems, whether real or perceived. Because of this course and the position within the department and the town, it was evident that this author needed to take an active role in putting together the information needed by the community and to help prepare the community for the possible affects of El

Nino this year.

It was also evident, from the past winter storms and El Ninos we faced, we don't have the personnel and manpower to handle every emergency that may occur, and if we could prepare the public so they could take care of themselves, and prepare themselves and their homes for the possibility of major winter storms, it would reduce the number of calls placed on our personnel and relieve our personnel from the mundane calls so as to handle the true emergencies.

LITERATURE REVIEW

In the State of California's El Nino Preparedness Regional Briefing document, 1997, it is stated (Staff) "Scientists generally refer to El Nino as it's related phenomenon as the El Nino Southern Oscillation "ENSO". A major disturbance affects other ocean current patterns and causes climatic changes worldwide, resulting in disastrous flooding and drought in some areas".

In 1982 to 1983, an ENSO caused droughts in India, Indonesia, Australia and the Philippines and flooding in Peru and Ecuador. In California, 1982 to 1983 was marked by more than 26 inches and over 100 million in coastal losses, including destruction to 33 ocean front homes, damage of another 3,000 homes and 900 businesses and 35 million dollars in damages to coastal public recreation facilities".

With 1982 and 1983's major disastrous effects still being felt in the San Francisco Bay Area, the news media throughout the bay area has picked up the call. In an article in a bay area newspaper, (Matteucc) is quoted "Get ready for a wet and wild ride. That's the battle cry of meteorologists, who predict that El Nino, the much talked about weather phenomenon, will bring heavy rains and winds to the bay area this winter, maybe as early as November".

It is brought up in another local newspaper. (Leopold) "Are you preparing for big time flooding, loading up on sandbags or better home insurance? Or do you think all this talk about El Nino is unfounded".

The San Francisco Bay Area, since early summer, has been inundated with calls raising the concerns of citizens, business people and the emergency services community to begin bracing for another 1982-83 El Nino. This has been echoed lately in the news media, both written and televised, of the consequences that this could happen to the United States. (Davis) is quoted as saying "the windy, rainy winter that meteorologists predict could wreak havoc in our yards and gardens and there is virtually no chance of having a winter that brings below normal precipitation". We in the emergency service industry know what we need to do during a major emergency, and how to accomplish those things. But we need to prepare and prepare our communities.

Many politicians are now climbing on the bandwagon as well. (Andrews), the Director of Emergency Services for the State of California is quoted as saying

Since 1974, winter storms have caused more than 86 deaths, nearly 600 injuries and over 5.6 billion in property and agriculture damage to California. The risk of severe winter storms from El Nino this year, following the recent floods of 1997 and 1995 underscores the importance of emergency preparedness for Californians. In the last two instances alone, 36 lives were lost with damages estimated at 4 billion.

Governor Pete (Wilson), in a letter to the President of the United States, is quoted as saying:

Dear Mr. President: As you know, the extreme El Nino influence that currently exists has the potential to cause severe damage to regions of California this winter. While the forecasters caution that El Nino could result in either very wet or dry conditions, the prudent course is for government to take actions to protect Californians from a repeat of the flooding we experienced last year. Governor Wilson goes on further to say there is a famous line attributed to Mark Twain, everybody talks about the weather but nobody does anything about it, Wilson said. Well, half the quote applies to El Nino's summit. We will talk about the weather today but we also intend to do something about it.

The Governor met in San Diego in early fall this year with members of the emergency services community, as well as state and federal management officials and politicians to discuss what could be done to prepare for this years El Nino. Tons of paperwork were produced through that summit in an effort to prepare the communities throughout the State of California in the event of another severe El Nino winter.

The Marin County Board of Supervisors echoed this in a flyer that was sent out to all Marin County residents, with this statement (Brown, Kinsey, Kress, Moore, Rose):

Recent media coverage has focused on the potential return of El Nino. While the timing or severity of storms and tides can be predicted with complete accuracy, it is important that we all take precautionary measures. County forces are checking levies and pump stations, cleaning culverts and ditches, and sweeping streets. Now is the time to educate yourself and make preparations to protect your personal property.

From all the literature reviewed, it seems like everybody, both nationally, locally and regionally, have an interest in the preparations for the possibility of a disastrous El Nino year. Senator Barbara (Boxer) commented in October 1997,

The only thing predictable is how unpredictable it really is. Unlike other disasters, i.e. earthquakes, we have a fair warning of this

disaster and it is our responsibility, all of us, with this information to make ourselves and our communities prepared. If we are over-prepared, so be it. The idea is to get in front of all this and decrease the damage that might occur. All disasters are local.

The head of FEMA, James (Witt), echoed this at the recent summit held in Santa Monica, California.

We are here today to do something unusual and it shouldn't be. That is, to plan for a disaster. We have to break this damage repair, damage repair cycle. Since 1993, FEMA has responded to over 4,000 communities and spend 14 billion in aid. Those were the only federal dollars spent and don't count county and economic losses.

Richard (Andrews), the manager of State OES, also commented that:

We need a one-stop center for federal aid, one federal agency that could be the lead in single source of federal information. Preparation is valuable for this event and all others. We need to pre-position ourselves to respond effectively.

This author reviewed hundreds of documents over the Internet that were distributed and put together by the State of California Office of Emergency Services, as well as the Federal Emergency Management Association. There are a number of other articles that have been produced by local utility agencies,

county office of emergency service agencies, and local communities.

The Town of Corte Madera, a few years ago, prepared a document that was distributed to every resident within the Town of Corte Madera. It was the Town of Corte Madera's Emergency Preparedness Handbook, and it was written by Susan (Moxon), and modified for use by a number of members of the Corte Madera Disaster Council. Within this book it is quoted that

The Town of Corte Madera has prepared this handbook for the following reasons.

In the event of an earthquake, a wildfire, or other large scale emergency, you should expect to be without adequate municipal services, including emergence response services, for a period up to 72 hours. You must, therefore, prepare in advance to be as self-reliant as possible, and that this handbook has been prepared to help you become self-reliant." This book has a whole section on flood and winter storms as well.

It is interesting that the fire department continues to receive as many calls as we do regarding what the town is doing to prepare for the winter storms, as well as what the community and the individuals can do. Much information is out there, both in brochure format, as well as on the Internet.

Weekly newspaper articles, as well as radio and television media, have broadcast information to prepare communities for the upcoming event of El Nino.

PROCEDURES

The Learning Resource Center at the National Fire Academy National Emergency and Training Center was not the only facility used for this project; however, it was there that the research began. This author requested a "subject search" in the computer file using "El Nino" and received 24 possible sources. Those sources were received and reviewed and there was very little information of interest for this paper.

The author also requested information from the State Office of Emergency Services, as well as the Marin County Office of Emergency Services, on El Nino as well as the possible affects of El Nino. Numerous articles were collected by this author through the Disaster Council of the Town of Corte Madera, who collected information regarding the effects of El Nino, and preparedness factors for that.

The Town of Corte Madera's Disaster Council is a council of persons headed by this author and made up of department staffs including police, public works, recreation, finance, planning and administration. It also includes members from the general public, residents, which represent a varied array of people, including the young mothers, families, the elderly, and members of the business community.

Many questions were brought before this author at the Disaster Council on what our community was doing to prepare for this possible effects of El

Nino. This author did research on the history of El Nino and what has occurred in the past and it was evident from the beginning that El Nino does impact our community but so do the major winter storms as we saw in 1995 and 1996. The effects of both these two have similar effects as are outlined in the Town of Corte Madera's Disaster Preparedness Manual. A review of the Town of Corte Madera Disaster Plan, which is an all-inclusive disaster plan, outlined the possible effects of torrential down pours including slides, flooding, and other consequences of heavy rains and high tides.

The Town of Corte Madera's Disaster Council was very active in putting together a list of information that was needed by the public for the preparations before, during and after severe winter storms/El Nino. The Town of Corte Madera Department Heads were asked for the same types of information which we thought, as staff, would assist the public in preparing themselves for the possible effects of El Nino before, during and after.

Upon receiving all the information, brochures, and other, it was evident there was a common scenario forming along this. There was tons of information produced by an array of individuals from individual localities to the federal government on what homeowners and property owners could do to reduce their losses, both property and personal, from severe winter storms and the effects of El Nino. This author formed a subcommittee of the Town of Corte Madera's Disaster Committee to look at all the information that was being put together and to pull out something to get out to the general public.

It was evident, with all the array of information, that we needed to do something different. We had already distributed in previous years, the Town of Corte Madera's Emergency Preparedness Handbook, there was information in the front of the local phone books, and there was information being distributed by the local utility companies, both gas and electric, as well as water, on what homeowners could do to prepare for the upcoming severe winter storms. It was decided, with the input of the members of the Disaster Council, that the most advantageous thing for both the community, as well as the departments of the town, was to get something that was readily available that people would keep on hand. Therefore, it was decided a laminated card would be put together, where people could actually put this on their refrigerators for quick reference.

This author addressed the Town of Corte Madera's Chamber of Commerce to receive funding, as funding was needed. A preliminary budget had already been worked out and there were no budget monies available within the Town of Corte Madera. With a member of the business community serving on this subcommittee, we were able to receive the funds to put together the flyer. The flyer was finalized, both by input from the subcommittee as well as department heads, to fine tune this as much as possible. We already had a list that was put together after the 1995 storms, of the majority of calls we went on, and what we could do to reduce the number of miscellaneous that both fire and police and public works were rolling on, as well as minimizing the amount of phone calls coming into the town.

The flyer was done on a brilliant yellow paper and laminated. To date, we have received many comments back from the local citizens of the town, both business and residents, that this is a very valuable document and something that was being kept readily available for quick reference.

RESULTS

Answers to the research questions were obtained both through the literature review of a number of documents and working with the Disaster Council, the subsection of the Disaster Council and town staff.

The first question which was posed and answered is: What questions does the public have regarding El Nino preparations? The public was very interested in a number of issues. They basically fell into two categories; what is the Town of Corte Madera doing to prepare for El Nino with its infrastructure, as well as to assist the community. The second area is what they could do to prepare their homes and themselves.

In regards to what the Town was doing for the public, that information is contained in Appendix B. Responses from different departments throughout the town yielded the answers to the question, What is the town doing for the community? It had a wide array of responses in that the preparedness the fire department was doing after the fire season ends, typically, wildland fire equipment comes off and winter storm equipment, such as pumps, salvage

equipment and sand bags, goes on.

The Public Works Department responded with sandbagging, cleaning storm drains, and the amount of street cleaning that was taking place, as well as tree and brush trimming throughout the roadways. The Police Department spoke about their preparedness with traffic control, etc.

The response to what the community could do to prepare themselves was found in the literature review that was conducted. It had a wide array of responses, but typically focused around the areas of what would happen if power was out, road closures occurred, were the citizens prepared to take care of themselves for up to 72 hours (Appendix C). This is also seen in Appendix A which shows the final result of the 'Preparing for the Storm Checklist and Guide' which was distributed to all residents and businesses in town.

One of the main results was the phone list that was put together for the residents. This dramatically reduced the amount of calls coming into the emergency dispatch centers. Who to call after 5 o'clock at night when most department offices are closed, who to call for road closures, who to call to get information about phone and power outages and weather forecasts was invaluable.

The second original research question was: What information does Town staff believe the public needs to better prepare themselves for the possible effects of El Nino? The response to this is also found in Appendix B. In

responses from department heads when requested by the Disaster Council Subcommittee, is the information we could get out to the general public to reduce the amount of phone calls coming in, as well as what the people could do to properly prepare themselves prior to the storm, so as not to wait until the last minute and expect emergency personnel to handle their miscellaneous calls, such as pumping out basements, providing electricity for medical equipment and sump pumps, keeping their drainage systems clear and in good shape, and making arrangements to prepare themselves to be on their own for 72 hours.

The final research question needing to be answered was: What is the best way to disseminate information to the public on preparation prior to, during, and after an El Nino disaster? We found that there was no one best way - there were a number of ways. The town has an AM radio frequency which we continue to disseminate information on; local TV and radio disseminate information as well and there are a number of flyers being distributed by the local utilities, county emergency services, and state and federal offices. However, we found that the one best way for us to disseminate the information to reduce the amount of calls for questions and responses to miscellaneous calls was to disburse the laminated storm checklist, which people could have readily available to review.

DISCUSSION

Throughout the review of literature the importance of the El Nino phenomenon became apparent. Numerous agencies, both local, regional, state and federal, are working hard to get information out to the public on preparing for the possibilities of the El Nino phenomenon. Some of the information is very brief in its presentation, such as the local utility agencies, as well as the county board of directors and the flood control agency. However, some information is quite lengthy and quite involved. Bringing up hits on El Nino on the Internet, there were numerous articles and web sites for the El Nino phenomenon. FEMA has an extraordinary amount on different areas of preparedness. However, in reviewing all this information, why are there so many requests coming in on what to do to prepare and how come people aren't utilizing the information that is already out there?

It is evident, through the review, that if you give too much information to people, people don't often utilize that, or they place it in a place that is unavailable for them to utilize. Getting priority information out to the public to use in the case of an emergency needs to be readily available and also has to be something that people will put in a place that is appropriate.

It is interesting to note through the discussions that took place with the different department heads, the amount of phone calls we get requesting information on different things, such as weather conditions, weather forecasting, and road closures. We tend to get upset about those many requests, annoying our personnel as well as taking up the phone lines for non-emergency type items. However, it was interesting to find that when those phone numbers were given out, the phone calls drastically reduced.

Specifically, for weather reports and road closures.

The Town of Corte Madera did put together a home preparedness handbook, and it seems as though many of the people have the handbook, but didn't realize that there was information contained within the body of that to prepare themselves for any El Nino phenomenons that may occur. However, since we sent out this new laminated piece of information, we have gotten nothing but positive comments back from both the business and the resident population within the town. The amount of phone calls have drastically reduced to the dispatch centers as well as the fire house and town hall phone lines.

It is clear that when the El Ninon phenomenon hits with a major storm and affects the infrastructure and personal and private properties within the town limits, that we will have a far reduced amount of phone calls coming in for assistance, thereby freeing up our personnel to handle the true emergencies as they do come in. It also heightened the awareness of our own personnel, both in the fire, police and public works departments, and basically rolled over outside our community into the rest of the county.

RECOMMENDATIONS

It is recommended that every town or fire department address the needs of early preparations for any disaster. The effects of El Nino, and its phenomenon with winter storms, cause departments a lot of grief and a lot of

unnecessary work. By preparing a document for use by the public and the business community, with tips on what they can do prior to, during and after an actual emergency, specifically a winter storm or El Nino effect, can greatly reduce the amount of calls fire departments spend on mundane calls, and relieve dispatchers and administrative services from answering unneeded phone calls from the general public.

By including phone numbers and information on where people can get the information they need, will reduce the amount of time fire department staff spend dealing with these phone calls and minor emergencies.

It is recommended that fire departments research the most adequate way to dispense that information and get it to the public in a way that it is easy to use by the public and readily accessible.

It may be necessary to find the funding to disburse this information and it is important that you get feedback from the general public on exactly what they think is needed. This may done a number of ways, but more accurately by including personnel in the start of any development.

Positive change can come from this, by dispensing the appropriate information to the public. We have had nothing but positive feedback from the public on the help that we have given them, and we have actually had the public come to our help by including information on what they can do to reduce the amount of calls we go on, such as cleaning out the storm basins in front

of their houses, having their own back-up power on hand, as well as many other helpful safety tips.

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Appendix A



Town of Corte Madera

300 TAMALPAIS DRIVE AT WILLOW AVENUE
P.O. BOX 159, CORTE MADERA, CA 94976-0159

22

November 25, 1997

Dear Town of Corte Madera Neighbor:

The Town of Corte Madera is happy to offer the enclosed materials for your safety and preparations for the winter storm season. This flyer was made available to you through a generous donation from the Corte Madera Chamber of Commerce and the work of individuals from the Corte Madera Disaster Council.

As you know from television news and local newspapers, the threat of El Nino this year is once again forecast. We are unaware to what extent the Town of Corte Madera may be impacted by this phenomenon; however, we do know that Marin County has had heavy and even disastrous winter storms over the last several years.

The Town of Corte Madera staff is busy this time of year preparing for the winter storm season in a number of ways. The Public Works Department is busy cleaning 800 of our catch basins and 47.5 miles of storm drains. The street sweeper has been busy removing 100 tons of debris from the roadway and storm drainage system. Sand and sand bags have been placed at several locations throughout town, and the Public Works crew is busy maintaining drainage and flood control infrastructures. The fire department has replaced the wildland firefighting equipment with winter storm salvage equipment.

The Town has offered assistance to all Corte Madera schools - public and private. Schools need to have adequate supplies and communications equipment, and staff and teachers need to be properly trained. If you have questions regarding the disaster plan at a particular school, we urge you to contact the Principal or the staff member in charge of emergency preparedness.

The enclosed safety flyer is provided to help you prepare for the winter storm season and inform you of what to do in case we actually experience the impact of a severe winter storm in Corte Madera. There will be a Winter Storm Seminar on Tuesday, December 9, 1997 at 7:00 p.m. at the Fire Station, 342 Tamalpais Drive, Corte Madera. Call 927-5077 if you wish to attend.

If there is anything that any of the departments within the Town can do to assist you, please feel free to call any of them during normal business hours.

Sincerely,

Melissa Paulson
Mayor

Robert C Fox II
Director of Emergency Services

During the Storm:

- Tune to local radio/TV stations and the Town's Emergency Broadcast Station - 1330 AM - car radio is best.
- Avoid unnecessary trips and **do not** sightsee.
- **Do not** drive through or cross deep water (6 inches of swiftly moving water can knock people off their feet). If your car stalls, get out and move to higher ground.
- If traffic signals are out, vehicles are required to stop and proceed when safe to do so.
- Use phone for family emergencies/report dangerous conditions.
- Use 9-1-1 only for life threatening situations.
- **Do not** use 9-1-1 as an information source (see below).
- Keep catch basins on streets adjacent to your property free of debris. If you see a clogged basin, please clean it or report it.
- Water and electricity **do not** mix. For more info, refer to page 20 in the *Disaster Preparedness Handbook*.
- Always take appropriate health precautions. Flood waters are contaminated.
- Once you are safe, help your neighbors.

Emergency Phone Numbers: (Please read this carefully)

1. Life Threatening Emergency: 9-1-1 **EXCEPT** if using a cell phone, call **927-5151** (or call will be routed to Vallejo).
2. Non-Threatening Emergencies:

A. Between the hours of 8:30 am and 5:00 pm - Monday - Friday:

To report, trees down, clogged drains, flooding: **927-5057**.

B. After 5:00 pm and on Saturdays and Sundays:

Non-threatening emergencies should be reported to **927-5151**.

C. Information on local street closures:

Tune to Emergency Broadcast Station 1330 AM.

Other information, call **927-5151**.

24 Hour Numbers

Power Out: 1-800-743-5002
Weather Forecast: 364-7974

NOAA Weather Radio: 162.40 mHz

Phones Out: 1-888-PBDAMAGE
Roads (Caltrans): 1-800-727-7623

Preparing for the Storm Check List

- ☐ It is essential that you read the *Disaster Preparedness Handbook*! They are at Fire Station 14, 342 Tamalpais Drive.
- ☐ Portable Radio and extra batteries. Keep this radio with your emergency supplies and have it set on the Town's AM Radio Emergency Broadcast Station - 1330 AM.
- ☐ Check with your children's school on their emergency procedures. Plan for family reunion locations in case you are separated.
- ☐ First Aid Kit and essential medicines. Names of prescription medicines posted on your refrigerator.
- ☐ Canned food, baby food, pet food, bottled water (1 1/2 gal./ person/day), non-electric can opener, flashlights and batteries.
- ☐ Inspect and clean drains, ditches and culverts on your property. Do not rake leaves into the street - bag them.
- ☐ Have alternate power sources, with fuel, for medical equipment and sump pumps.
- ☐ Keep your car fueled. Have sturdy shoes, warm clothing, a slicker and a flashlight and other essentials in your car in case you get caught in a flood.
- ☐ If your house is under construction, have a 24 hour phone number of your contractor.
- ☐ Monitor weather reports on local TV/Radio and the Town's Emergency Broadcast Station 1330 AM.
- ☐ If you are in an area prone to floods or landslides, make arrangements to stay somewhere else.
- ☐ Have sandbags, plywood and plastic sheeting, lumber and other emergency building materials handy for waterproofing.
- ☐ Be prepared to evacuate. Plan safe routes from your home or office to high ground and what you need to take - pets, cash (power outages, ATM's are down). medicines, valuable documents.
- ☐ Bring outdoor belongings indoors.

Storm Watch

A **WARNING** is issued when a flood hazard is imminent.

A **WATCH** is issued when a flood situation is anticipated.

Special thanks to the Corte Madera Chamber of Commerce for providing the funds to produce this Storm Preparedness Safety Card.

Appendix B

Prior to the Storm

Inspect and clean drains, ditches and culverts on your property. Do not rake leaves and debris into the street.

Have alternate power sources, with fuel, for medical equipment and/or sump pumps.

If your house is under construction, have a 24-hour phone number for your contractor.

Monitor weather reports and tune to local radio and TV stations, as well as the Town's AM Radio Emergency Broadcast Station, located at 1330 AM

Have a 24-hour supply of food, water, medications, baby food and other supplies available.

Have a plan on how to get out of your area in case of floods or landslides.

If you are in an area prone to floods or landslides, make arrangements prior to a storm where you may stay.

If you see a potential problem, please call the Public Works Department (927-5069) immediately.

Store supplies at work and home, including first aid kit, essential medicines, food, non-electrical can opener, portable radios, flashlights, spare batteries, and keep your car fueled.

Store drinking water in closed, clean containers.

Have sandbags, plywood and plastic sheeting, lumber and other emergency building materials handy for waterproofing.

Know your safe routes from your home or office to high, safe ground.

During the storm

Avoid areas that are subject to flooding.

Do not cross or drive into deep water. If your car stalls, immediately get out and seek high ground.

Do not sightsee.

Avoid unnecessary trips.

Use the telephone only for family emergencies or to report dangerous conditions.

Tune to local radio or TV stations, as well as the Town's emergency broadcast station 1330 AM.

Sandbags and sand are available at both fire stations.

Use 9-1-1 only for life threatening situations. Do not use this number as an information source.

If traffic signals are not operating, all vehicles are required to stop and proceed only when safe to do so.

Do not go sightseeing.

Clear blocked drains if safe to do so.

Keep catch basins on streets adjacent to your property free of debris.

Do not rake or pile yard debris into streets.

If you see a clogged basin, please clean it

For more detailed information, refer to your copy of the Town's *Emergency Preparedness Handbook* (red booklet) and the front of your local telephone book. More information is available through the Corte Madera Fire Department.

Cover letter

How the Town is preparing for the winter storms.

2. Read the Disaster Preparedness Handbook, etc.
3. The enclosed check list.

Join NERT-

Sandbags

Helping your neighbors prepare - especially
our Senior Citizens and physically
hand-capped

M E M O R A N D U M

TO: MAYOR AND DISASTER COUNCIL

FROM: BETH BENZ

DATE: SEPTEMBER 29, 1997

SUBJECT: STORM PREPAREDNESS CARDS

* * * * *

I spoke with Jack Sutherland to get prices on having the Storm Preparedness Cards printed and laminated. The following are the costs:

Envelopes:

4,000 6 x 9 white envelopes, printed with Fire Department return address and bulk mailing permit logo	\$ 190.81
5,000 envelopes as above	229.58

Cards:

4,000 5 x 8 cards, printed on both sides	\$ 170.00
Laminating costs	<u>760.00</u>
Total cost of 4,000 laminated cards	\$ 930.00
5,000 cards as above - printing	202.28
Laminating costs	<u>950.00</u>
Total cost of 5,000 laminated cards	\$1,152.28

Mailing costs should run between \$.13 and .209 per peice.

There are approximately 3800 households in Corte Madera, therefore the postage would run between \$494.00 and \$794.00.

Taking in all the costs of printing envelopes, cards and mailing, the most it would cost would be approximately \$2,200.00, or less than 60 cents per residence.

The turn-around for printing and laminating would be approximately to 2 weeks

Also-

In a recent discussion with one of our senior citizens, there was concern about sandbags - they cannot fill them and move them. Maybe through this card, the Disaster Council, and NERT, we could organize a "Senior Sandbag Day" where our seniors could call in ahead and order sandbags, the volunteers could fill them and deliver them on Senior Sandbag Day. Maybe too, how many sandbags each senior would need could be predetermined.

Could we also do a program - like "Adopt a Senior" where younger neighbors could be responsible for checking on their senior neighbors to make sure they are all right. We have so many new young families in our community - especially in the flats where flooding could occur that it would seem that perhaps a program like this might work.

Bob,

Here are the revised comments for the disaster flyer.

WHEN TO CALL 911:

- LIFE THREATENING
- MEDICAL EMERGENCIES
- IMMEDIATE DANGER AGAINST PERSON / PROPERTY
 - 1- LANDSIDLES
 - 2- GAS MAIN RUPTURES
 - 3- STRUCTURAL DAMAGE

DO NOT USE 911 for asking questions about road closures, flooded areas, causes for power outages, when power would be restored, weather conditions etc.

NON-FUNCTIONING TRAFFIC SIGNALS:

When a controlled intersection is non-operational during a power outage, all vehicles are required to stop and then proceed into the intersection only when it is safe to do so.

DRIVING IN A FLOODED AREA:


We recommend against driving in a flooded areas at any time. Alternate routes should be taken or you should wait until the water subsides. If you must travel through flooded areas, DRIVE SLOWLY / CONTINUALLY CHECK YOUR BRAKES / USE THE CURBSIDE TO JUDGE DEPTH OF WATER / NEVER TAKE CHANCES OR RISKS

COMMON SENSE AND GOOD JUDGEMENT SHOULD BE YOUR GUIDE DURING A DISASTER.



MEMORANDUM

TO: BOB FOX/DISASTER COUNCIL

FROM: DALE DALTON, SUPERINTENDENT OF PUBLIC WORKS 

SUBJECT: 1997 WINTER PREPARATIONS

DATE: OCTOBER 2, 1997

* * * * *

My suggestions to the public to help us:

PLEASE inspect and clean drains, ditches, culverts on your property.

PLEASE do not rake leaves and debris into streets.

PLEASE keep catch basins on streets adjacent to your property free of debris.

PLEASE notify Public Works immediately of potential flooding situations.

TURNING THE STORM

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TWIN CITIES • USE 911 ONLY FOR LIFE THREATENING
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BEFORE THE STORM

C.M.
FIRE
DEPT

- HAVE AN ALTERNATIVE POWER SOURCE (W/FUEL) FOR MEDICAL EQUIPMENT OR PUMPS.
- IF THERE ARE HOME REPAIRS GOING ON HAVE A 24 HR. PHONE # FOR THE CONTRACTOR.
- MONITOR WEATHER REPORTS & IF THE EMERGENCY SIREN GOES OFF TUNE TO 1330 A.M.
- HAVE FOOD, WATER, MEDS, ^{BATH FOOD} ECT FOR 24 HRS.

TWIN
CITIES P.W.

- HAVE A PLAN ON "HOW TO GET OUT OF AN AREA THAT IS PRONE TO FLOODING OR SLIDES."

IF YOU SEE TREE TRIMMING & MAY DO ==
EVEN MAKE ARRANGEMENTS TO STAY HERE...
ALSO LET WHOM EVER NEEDS TO KNOW HOW TO GET TO

C.M.
D.P.W.

- DO NOT LAKE OR PLE YARD DEEPER AND STR
SEE A CLOVER CARP LARVIN - CLEAN IT OUT

IF YOU SEE A POTENTIAL PROBLEM, PLEASE
CALL PUBLIC WORKS IMMEDIATELY

UTILITIES

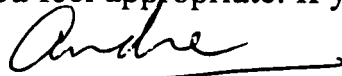
- IF YOU HAVE A GENERATOR PLUG INTO IT, NOT INTO YOUR HOUSE
CLEAR LIMBS AWAY FROM POWER

• I E F E

October , 1997

Bob:

At the last disaster council meeting, we were requested to submit to you general information about issues and concerns associated with disaster preparedness as they relate to our respective department. The following information may be of interest for the newsletter. Please use whatever information you feel appropriate. If you have any other suggestions please let me know.



WHEN TO USE 911

EMERGENCIES ONLY!!!.....examples : Life threatening situations / Medical emergencies / Immediate danger of losing property (ie) (landslides – major structural damage) / Gas main ruptures etc.

WHEN NOT TO USE 911

Please do not use the 911 phone for these types of situations or questions: ---
Tree down which does not pose a threat or danger to anyone - Power outages
- Asking questions about : Road closures, Flooded areas, Cause of power outage, How long before power is restored, What was the cause of the power outage, Weather conditions, (etc.)

NON-FUNCTIONING TRAFFIC SIGNALS

When a controlled intersection is non-operational, all motorists are required to stop before entering the intersection. The demands for other police services may not allow an officer to be present at an intersection when the signals are out. All vehicles are required to stop and then proceed into the intersection only when it is safe to do so.

DRIVING A VEHICLE IN A FLOODED AREA

We recommend against driving into flooded areas and any time. We suggest that you use alternate routes for travel or that you wait until the water subsides. If you must travel through flooded areas, always drive slowly to avoid creating a wake which will push water into the engine area of your vehicle which will cause your engine to stall. If you are uncertain about the

depth of the water or any other conditions in the area, do not place yourself in an unnecessary predicament. Don't take chances or risks. Use the curbside as a gauge for water levels. If the water is over the curb, you may consider finding an alternate route or return to a safe place. Test your brakes frequently. Loss of brakes or abrupt grabbing may occur when your wheels are subjected to flooding conditions.

Common sense and good judgment should be your guide during any disaster.

Appendix C

FLOOD CONTROL PREPARATIONS 1997

The Public Works Department maintains approximately 800 storm drain catch basins, 47.5 miles of storm drain mains, 8 automated Flood Control Stations and 15 Flood Control Gate Stations. We started vacuuming catch basins and drain lines in early August. To date we have cleaned all 800 catch basins, and vacuumed clean, all storm drain mains, known to have silt in them. We have removed 11.43 tons of silt and debris from our storm drain system to date. We have also removed 87.09 tons of debris from our streets with our street sweeper. That is 87 tons that could have been in our drainage system. All our catch basins and drains will be cleaned before heavy winter rains.

FLOOD CONTROL FIELD GUIDE

Area One

CATCH BASINS TO BE MONITORED

- A. Small Catch Basin at the Driveway Entrance to M.M.W.D. on Nellen Just South of Fifer. Check and clean this catch basin grate hourly.
- B. Hickory at the Low Canal Bridge. Monitor to prevent water from flowing onto Mohawk. Gutter water may have to be diverted into canal.
- C. Intersection of Tamalpais and Paradise. Minor flooding will require two "flooded" signs.

FLOOD CONTROL STATIONS

- D. Blackkettle Lagoon. In the event of a power failure, three options are available.
 - 1. Connect the 200 KW emergency generator positioned at the Marina Village Pump Station to the emergency connector.

If the 200 KW is unavailable, connect the 50 KW emergency generator positioned in the Corp. Yard. The 50 KW generator is set up to run one pump only.
 - 3. The State Gate at the end of Lucky Drive can be opened at low tide to empty the Lagoon.
- E. Lucky Drive Automatic Gates. Gate operations should be checked regularly. The Tesco computer should be in winter mode (setpoint 60 = 0). In the event of a power failure the 50 KW generator can be used to operate the gates.
- F. Lagoon #1. In the event of a power failure the 200 KW generator is to be started immediately. Within one hour of the power failure, during a rain storm, PG&E must be requested to restore power to our station using the Greenbrae Substation (see Emergency Response List).

Lagoon #1 should be monitored every hour. If the level exceeds -1.0 NGVD and it is raining, the Gator Pump must be activated.

During rain storms the inside sluice gates must be in the open position.
- G. Lagoon #2. Check pump and gate for proper operation every hour. During a rain storm, if the level exceeds 0.00 NGVD,

an auxiliary 6 inch pump can be placed in the wet well along the high canal.

In the event of a power failure, the 50 KW generator can be connected to the emergency connection.

The inside sluice gate must be open during rain storms

- H. Edgewater Lagoon. This lagoon is located at the rear of the Peppermill Restaurant. In the event of hazardous levels in Lagoon #1, a 48" gate located on the east side can be opened to allow water to flow to the Shorebird Marsh.
- I Shorebird Marsh Pump Station. The Tesco Computer must be in winter mode with the water level at -2.0 NGVD during a rain storm. Pumps and fuel must be checked regularly. When the Marsh is in winter mode the Twin 48" Gates (near the intersection of Old Redwood Highway and San Clemente Drive) must be opened. Note! Do not open the gates before the Marsh is at -2.0 NGVD. When the Marsh Twin 48's are open the Twin Understreet 48's (near the Highway Patrol Building) must be closed.
- J. Corporation Yard Flood Control Pump. This station must be monitored regularly. Check float mechanism, make sure controls are operational and the emergency generator is fueled up.

IMPENDING FLOOD INDICATORS

- K. The Two Catch Basins at the end of Apache Road. These should be monitored closely. They usually indicate when the Heather Garden area in Larkspur is flooding. When catch basins on Apache are flooding, Larkspur Public Works should be notified to check their pumps for proper operation. The phone number for Larkspur Public Works is 927-5028.
- L. Catch Basins in Front of the Theater on Tamal Vista. Water standing near the top of the basin indicates high levels in Lagoon #1.
- M. Catch Basin on Northwest Corner of Lakeside and Mohawk. High water levels here indicate high water levels in Lagoon #1.
- N. Ditch South of Birch Adjacent to Northwestern Pacific Railroad Right-of-way. High water in ditch indicates high water levels in Lagoon #2.
- O. 81 Lucky Drive. High water in the street indicates Corp. Yard Pump failure.

Flood Control Field Guide

Page 3

- P. State Ditch Along Highway 101 and East of Nellen. High water levels here indicate high water levels in the Blackkettle Lagoon.
- Q. Catch Basin at Fifer and Tamal Vista. High water levels here indicate high water levels in the Blackkettle Lagoon.
- R. Catch Basins at Nellen and Lucky Drive. High water levels indicate high levels in the Blackkettle Lagoon.
- S. State Ditch East of Highway 101 and at the Rear of The Village Shopping Center. High water levels indicate high levels in the Shorebird Marsh.

Area Two

CATCH BASINS TO BE MONITORED

- A. "Northrups Ditch" - Located Next to Hart Street, West of Palm and Pepper. The following three areas should be checked:
 - 1. Inlet of culvert located on the west side of the railroad right-of-way "in Larkspur".
 - 2. Junction structure located at the down stream end of the above mentioned culvert.
 - 3. Inlet of culvert from above open ditch. Re-bars catch debris and must be cleaned regularly.
- B. Intersection of Redwood and Willow
- C. Redwood at Corte Madera Avenue. Clean leaves regularly. Redwood at Edison.
- D. Redwood At Merry Lane. Clean leaves regularly
- E. Redwood at Crescent. These two catch basins plug unless leaves are removed hourly.
- F. Two Catch Basins on Corte Madera Avenue, 150 Yards n/o of Town Limits. Catch basins on both sides of the road.

PREVIOUS SLIDE AREA

- G. Corte Madera Avenue, 150 yards n/o Town Limits. Check regularly for slide indications.

IMPENDING FLOOD INDICATORS

- H. Catch Basin in the Middle of the West Parking Lot of Town Park. Water flowing from the basin indicates high levels in the High Canal, possible Lucky Gate failure, and/or problems with Lagoon #1 pumps, i.e., pumping too much water into High Canal against high tides.
- I. Catch Basin Inside Walk Near Concrete Culvert Playing Apparatus in Town Park. High water levels indicate high levels in Pixley Lagoon.
- J. Low Canal at Town Park Bridge. High water indicates high levels in Lagoon #1, possible pump failures.

Area Three

- A. Chapman at Stetson. This catch basin will be covered with leaves and floods intersection.
- B. Manzanita at Sausalito. These 2 catch basins will overflow unless leaves are raked off top.
- C. 413 manzanita. These catch basins carry a heavy amount of water. Grates need to be checked hourly to make sure they are clear. Also, there is an 8" VCP behind the sidewalk between 413 and 409 Manzanita we need to keep clear.
- D. Willow Creek culvert and grate on Oakdale. Carries a large amount of water and should be monitored hourly.
- E. 105 Grove has a box inlet to a 12" catch basin behind the house. This one should be checked hourly.

25 Grove. Check this hourly as it carries a great amount of water. The basin at the rear of the house should be checked regularly.
- F. 1495 Casa Buena has a small catch basin and pipe. The easiest way to keep this from flooding is to take the grate off the box. (Put barricade near opening.)
- G. 1441 Casa Buena. This floods every rain. Needs 2 "Flooded" signs. There are 2 culverts adjacent to the apartments that should be checked.
- H. West side of Montecito near end of street. Monitor catch basin and watershed south of basin.
- I. 351 Willow. This catch basin should be checked along with adjacent drains regularly.
- J. 5 Pepperwood Lane. Clean small drain hourly. In the event of heavy flooding use stockpiled sandbags to divert water.

Area Four

CATCH BASINS TO BE MONITORED

- A. Paradise Drive. There is a small catch basin located at the Pet Hospital that must be cleaned regularly.
- B. Intersection of Koch Road and Paradise Drive near southeast corner. This must be cleaned hourly "very heavy leaf fall".
- C. North of 21 Sonora Way. Check regularly
- C-1. Culvert under driveway to Ring Mountain on Paradise. Check periodically.

FLOOD CONTROL STATIONS

- D. Marina Village Pump Station. In the event of a power failure, the number two 200 KW emergency generator will be started.
- D-1. Note! The Twin Understreet 48" flappers must remain in the closed position when the Shorebird Marsh Twin 48's are open and the Marina Village pumps are running.

If complete pump failure should occur at the Marina Village Pump Station, the Twin Understreet 48" flappers should be raised to the open position. The Shorebird Pump Station will help get the water down.

- E. Channel Automatic Gate. The gate should be checked regularly to insure proper operation. If a power failure should occur, the gate can be operated manually. The Tesco computer should be in winter mode.

In the event of flooding in the marsh west of the gate, the weir board can be removed from the culvert entrance to the Marina Village Retention Pond. This will allow the Marina Village Pump Station to lower the water levels. Note! The height of the silt around the Air Bell on the east headwall must be checked.

San Clemente Automatic Gate. This gate must be checked regularly to insure proper operation. The Tesco computer should be in winter mode. If a power failure should occur this gate can be operated manually. The 50 KW emergency generator can also be connected to operate the gate.

- G. The culvert grate south of San Clemente Gate, at the rear of the Paradise Shopping Center. This grate must be checked and cleaned regularly. Debris builds up here fast. When checking this grate also inspect the air bell plastic air line.

- H. San Clemente Pump Station. In the event of a power failure, this station has a built in emergency generator. The generator should be checked and fueled regularly. The Tesco computer should be in winter mode. The sump grates must be checked hourly as debris builds up rapidly.
- I. Big G Pump Station, at the rear of Paradise Shopping Center. This station should be inspected regularly. The float mechanism must be checked to insure proper operation. If a power failure should occur a six inch pump, rented from Big-4-Rents, can be placed alongside the station.

IMPENDING FLOODING INDICATORS

- J. Catch basin in front of Paradise Motors. Water above the grate indicates possible pump failures at the Marina Village Pump Station and/or pump failures at the Shorebird Marsh Pump Station.

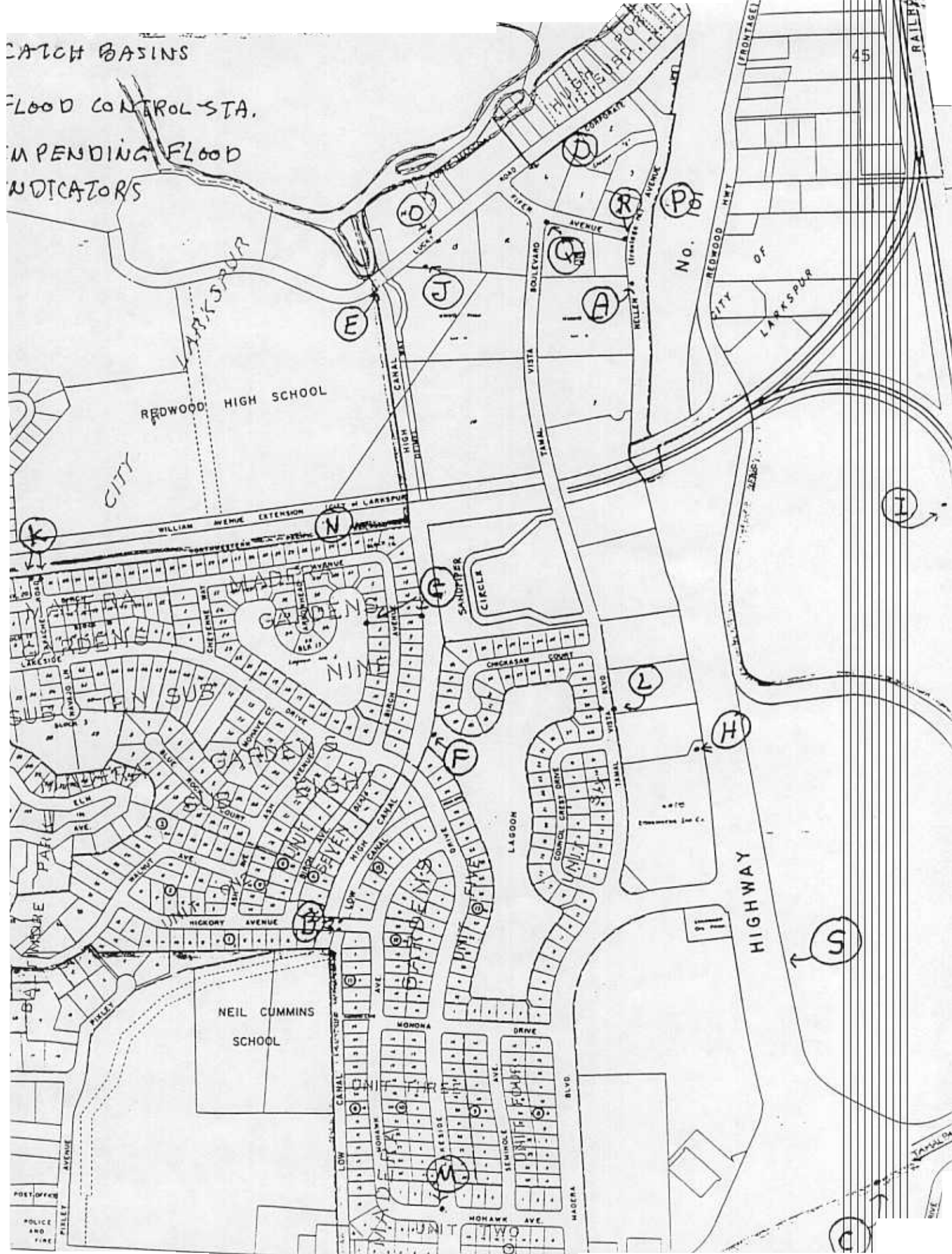
Water above grate can also indicate improper gate position at the Shorebird Marsh Twin 48" Gates.

- K. High water in the State Ditch east of Highway 101 at the Paradise off-ramp and high water in the catch basin near the Honda Dealership on Paradise indicates Shorebird Marsh Pump Station failure or improper gate position at the Twin 48" gates.
- L. High water in the catch basins at the intersection of Yolo and Harbor indicates possible gate failure at the Channel Gate and/or pump failure at the Marina Village Pump Station.
- M. Water flowing from catch basins near the San Clemente Gate indicate extreme high tides and small flapper gate failures on outfall pipes of catch basins.
- N. High water in the ditch at the rear of the Paradise Shopping Center or in the channel just west of Madera del Presidio. This indicates pump failure at the San Clemente Pump Station and/or gate failure at the San Clemente Gate.

CATCH BASINS

FLOOD CONTROL STA.

PENDING FLOOD
INDICATORS



GOOD CONTROL STA.

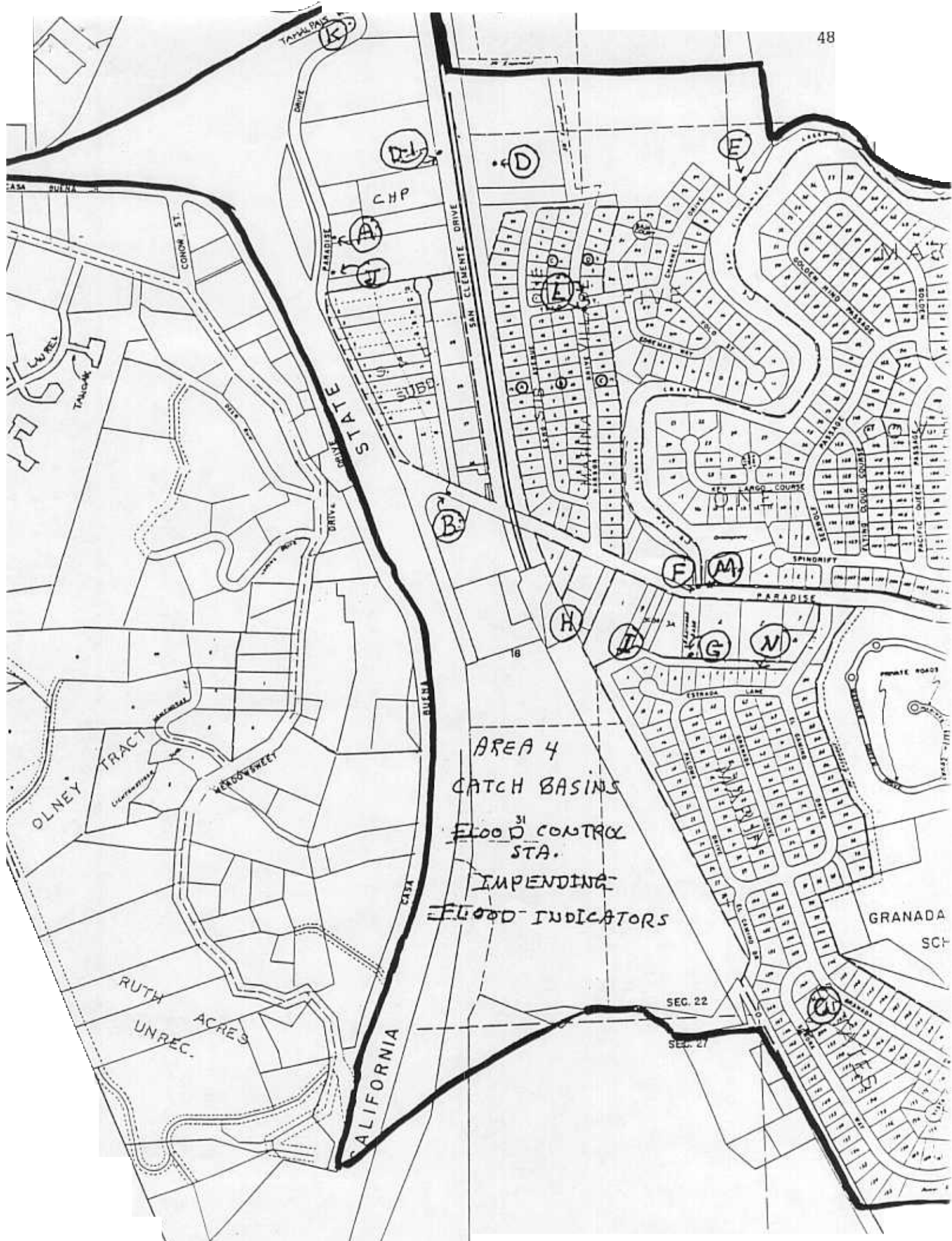
PENDING FLOOD INDICATORS



AREA 3

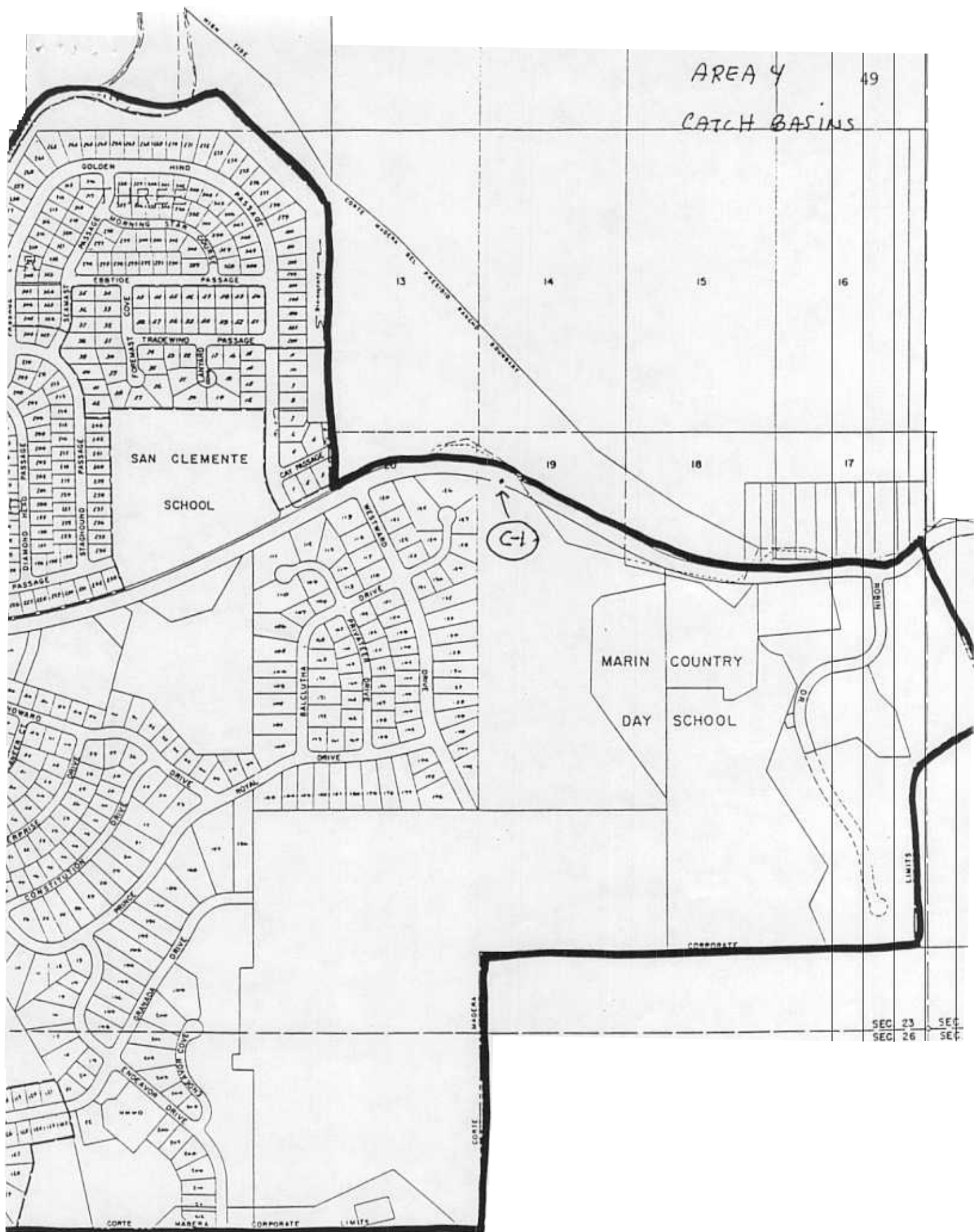
TCH BASINS





49

CATCH BASINS



MEMORANDUM

DATE September 25, 1997

TO: Disaster Council / Flood Control Board

FROM Dale G. Dalton, Superintendent of Public Works

SUBJECT: Flood Control Preparations

Communications:

A. All supervisors, the Duty Person and the Mechanic have been issued pagers to insure immediate response to any emergency situation. In addition the Duty Person and Superintendent have Cellular Telephones. All can be reached 24 hours a day.

B. Eight of our radios have multiple channel capability, we can in an emergency, communicate with the Twin Cities Police, the Fire Department, the Central Marin Sanitation Agency, and Cal. Cord. Our radios also have the weather channel for up to the minute weather monitoring.

2. Weather Monitoring

Weather monitoring will be the same as last year. The Superintendent will monitor the weather each day utilizing the weather channel and KCBS during the week. The Duty Person will monitor the weather on the weekends.

FLOOD CONTROL PREPARATIONS 1997

The Public Works Department maintains approximately 800 storm drain catch basins, 47.5 miles of storm drain mains, 8 automated Flood Control Stations and 15 Flood Control Gate Stations. We started vacuuming catch basins and drain lines in early August. To date we have cleaned over 524 catch basins, and vacuumed clean, 15 storm drain mains. We have removed 11.43 tons of silt and debris from our storm drain system to date. We have also removed 87.09 tons of debris from our streets with our street sweeper. That is 87 tons that could have been in our drainage system. All our catch basins and drains will be cleaned before heavy winter rains.

The lagoons will be lowered in October for our semi-annual gate and dock maintenance. During this period, the storm drains around the lagoons will be vacuumed clean.

2. California Electric has tested all flood control pumps and electrical components for proper operation. This is done on an annual basis.

- 3 Tesco has inspected and reccelebrated all flood control computers; this is also done on an annual basis.
- 4 The pumps and wires at the Black Kettle Lagoon, (lagoon A), were tested. The number 2 pump was rebuilt and the wiring on the number 3 pump was replaced.

The wiring on all three pumps at the Marina Village Pump Station was repaired
6. The number 3 pump at the Shorebird Pump Station was removed for inspection and minor repairs have been completed. We will install a new diesel motor on this pump before winter rains set in.
- 7 All the emergency generators were load tested, a few minor repairs were made.
- 8 A new 50 kw generator was installed on our last remaining Deutz Diesel engine. This generator will serve as our auxiliary generator. To be used where necessary.
- 9 A new submersible pump with a new controller and float system was installed at the Corporation Yard.
- 10 New lift nuts were installed on the gate stems at the Lucky Gates

A number of storm drainage improvements were completed, The Corte Madera drainage project, the Montecito to Willow project, and a new catch basin and drain on Tamal Vista, to name a few.
12. New curb and gutters were installed on Birch, Lakeside, Golden Hind. and Chapman.
- 13 All flood control gates and pumps are scheduled for monthly maintenance, ie. Inspections, gate stem greasing, adjustments, exercising, mechanical repairs, etc. This will continue on a regular basis.
14. The street sweeper is scheduled for sweeping in areas of heavy leaf fall during hard rains. We will also increase the frequency of sweeping as the trees begin to drop more leaves.
- 15 The following ditches have been or are scheduled for cleaning. The outfall snitch at 5164 Paradise, ditches along Paradise, Meadowsweet, Heart, Tunnel lane and the ditch East of El Camino.
16. Cross training in flood control procedures for all Public Works employees is continuing on an ongoing basis.

WE WILL BE AS READY AS WE CAN BE!